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DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

EXCLUSIVE ANNUAL INDUSTRY SURVEY

LARGE SYSTEMS ARE HOT!

Networked Computing Drives Demand for More Mainframes PAGE 24

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MAY 15, 1990

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NUMBER 10

DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

COVER STORY

90 RESEARCH
LARGE SCALE SYSTEMS SURVEY

The corporate mainframe system takes the spotlight once again.

Large Systems Are Hot! 24

BY JEFF MOAD The latest DATAMATION/Cowen & Co. survey reveals that demand for IBM and compatible large-scale systems is rallying, as average system prices soar and new applications continue to find a home on increasingly network-oriented Big Iron.

Cover photography by Ed Braverman

INSIGHTS ON DISTRIBUTED COMPUTING

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CADventures
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Maggie Konner
International Data Corp.
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Once you get it [the information requested], what does it all mean? Generally, we have a very poor understanding of the vast majority of data today.

Stuart E. Madnick
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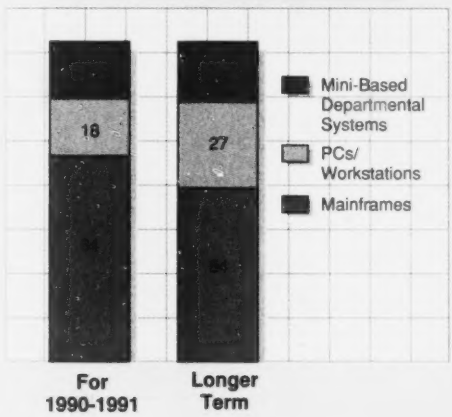
The Source of the Heat in Large Systems

Most thinking people in the industry would agree that different sized computer systems have different roles to play in corporations. Large-scale mainframe systems in big companies are the keepers of the corporate databases. Midrange computers help run the divisions and departments of many companies, but in some smaller firms actually serve as the corporate hosts. PCs and workstations, which initially empowered individuals, are now also playing larger corporate roles, many times in concert with their larger-scale brethren.

The point is that even though the lines between different types of computer systems are sometimes fuzzy, there is no one world out there. Computing will never be characterized by just one size or type of system, either mainframe or PC or, for that matter, either proprietary or open system. Our deepest apologies to zealots in the mainframe world and the PC world. It just ain't reality folks.

Where New Applications Are Going

PCs and workstations are picking up in companies with $50 million or more in revenue, but even in the longer term, mainframes still lead.



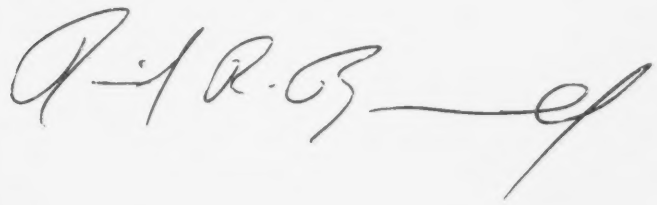
Source: DATAMATION/Cowen & Co.

But even though different types and sizes of systems will persist and coexist, they will do so in a different way than they have in the past. As our latest DATAMATION/Cowen & Co. survey of computer sites throughout the United States and Canada shows, tangible evidence is building that the much talked about era of networked computing is dawning.

Our cover story on the survey, written by San Francisco bureau manager Jeff Moad, reports what you have told us—that the role of Big Iron is transforming into a very large server of information-processing services in expanding networks of personal computers, workstations and minicomputers. As a result, the unit demand for more IBM and compatible mainframe systems is up, although modestly, from a year ago. More important, though, is that the size and value of planned large multiprocessor installations is up considerably. For the first time since 1986, the average price that IBM 3090 users expect to pay for systems is up, climbing 36% to $4.2 million per system.

But the clincher is at the applications level. Survey respondents from companies with $50 million or more in revenue say that 64% of their new applications in 1990–1991 will be implemented on mainframes. Longer term, the big systems will be used to implement 54% of new applications.

We think these figures suggest that an expanded role for large systems in computer networking is coming about. And this is what's turning up the heat in large systems.



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LARGE SYSTEMS ARE HOT!

The latest DATAMATION/Cowen & Co. survey reveals that demand for IBM and compatible large-scale systems is rallying, as average system prices soar and new applications continue to find a home on increasingly network-oriented Big Iron.

BY JEFF MOAD

Don't look now, but that dinosaur of information technologies—the corporate mainframe system—may finally be moving into the role that its backers have been advocating for the past several years—the very large server of information-processing services in expanding networks of personal computers, workstations and minicomputers.

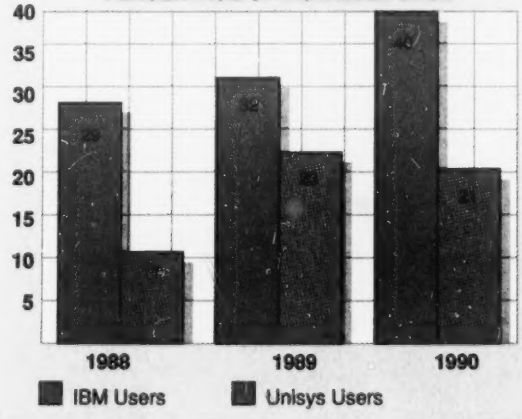
While continuing to face tighter hardware budgets, corporate users responding to the 13th annual DATAMATION/Cowen & Co. Large and Midrange User Survey say they are still building new applications around large systems. Many of those applications require distributed processing, and increasingly they involve large networks of PCs. To support those networks, many large users say they will buy bigger and bigger complexes of mainframe processors, memory and storage.

Most users don't expect IBM to help anytime soon by shipping Summit—the code name for its long-rumored next-generation large multiprocessor mainframe. But that's not going to stop users from

Where the Resurgence Is Taking Place...

IBM users plan to increase the value of their large-systems installations as a percentage of their installed bases over the next 24 months.

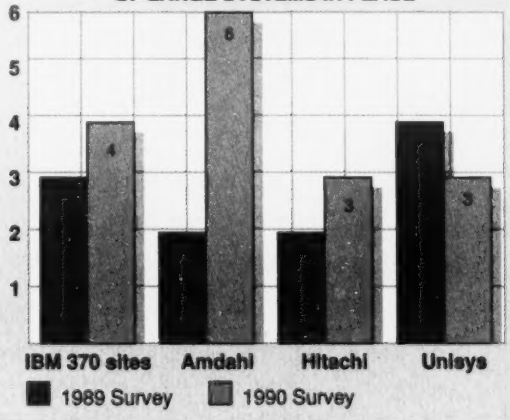
VALUE OF PLANNED INSTALLATIONS AS A PERCENTAGE OF INSTALLED BASE



In Unit Growth...

Amdahl, Hitachi and IBM users plan more new installations as a percentage of their large systems already in place.

PLANNED NEW INSTALLATIONS AS A PERCENTAGE OF LARGE SYSTEMS IN PLACE



Users are buying larger systems, and they're writing the applications themselves.

installing IBM's largest systems. In fact, the survey shows that IBM users now expect to increase the value of their installed large-system hardware bases by 40% over the next two years. That's up from 32% last year and 29% in 1988.

Overall, users say the number of new mainframes they'll be adding will be up modestly. Users of IBM 370-architecture machines, for example, will increase large systems in use by 4% in the 1990-1991 timeframe, up from 3% last year. For Amdahl Corp. users, the installations will be up 6%, compared with 2% last year. And Hitachi Data Systems Corp. users (the former National Advanced Systems Corp. base) will increase their installed mainframe bases by 3%, up from 2% in 1989. Only users of Unisys Corp. mainframes will be adding systems at a slower rate, 3% compared with the 4% they cited last year.

But what's significant is the cost and the apparent size of the mainframe systems users are buying and the fact that they are often building new applications to run on these large-scale systems. For the first time since 1986, the average price that IBM 3090 users expect to pay for systems is up. Those users expect to pay a whopping $4.2 million per system, up almost 56% compared with the $2.7 million they cited last year. And the dramatic user preference for large, multiprocessor systems, increased memory and storage seems to reflect a trend toward intensified data center consolidation. It also undoubtedly reflects increased IBM systems software prices and the decision to limit some mainframe field upgrades.

Interestingly, the survey suggests the much-ballyhooed user push for outsourcing has been overstated. Users are buying more and larger systems, and they're writing the applications and running those large systems themselves. Asked to measure their interest in outsourcing on a scale of 1 to 5, with 5 representing no interest, users from large organizations with annual revenues over $500 million averaged a 4.47 response. Interest at smaller organizations was even lower. Seventy-seven percent of all respondents say the IS department still has procurement responsibility for office, as well as traditional, computer systems.

As the answer to the outsourcing question shows, the majority of users are continuing to run their own IS organizations. And, perhaps surprisingly, given all that's been said and written about the rise of workstation networks and low-cost UNIX machines, users are continuing to build most new applications around the proprietary mainframe. In fact, survey respondents from companies with $50 million or more in revenues say that 64% of their new applications in 1990–1991 will be implemented on mainframes, with 18% on minicomputer-based departmental systems and another 18% on PCs and workstations.

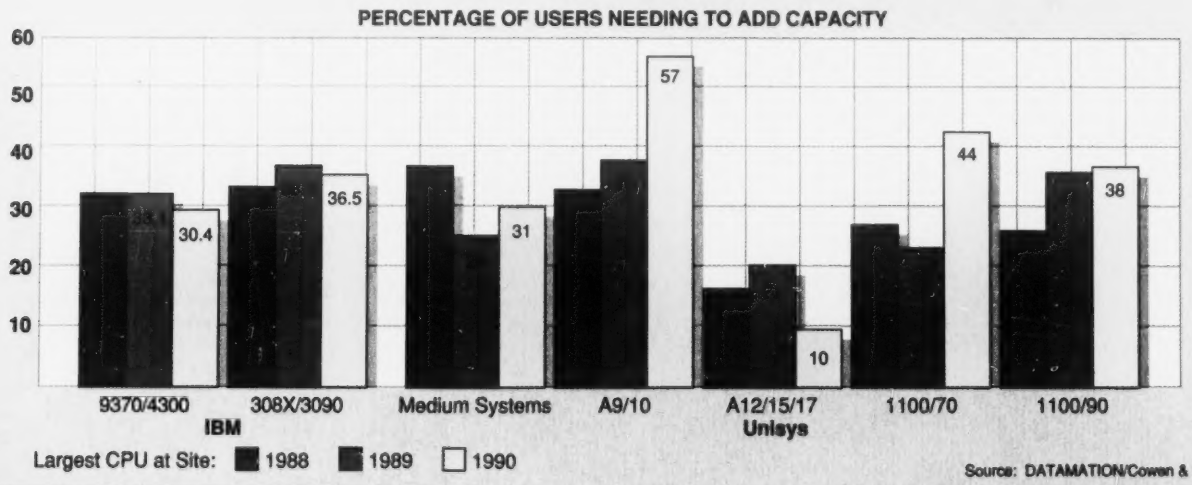
Of course, PCs and workstations are continuing to account for higher spending percentages and to carry more of the IS load. But larger users now say that, even in the longer term (i.e., beyond 1991), 54% of new applications will be implemented on mainframes. At the same time, 27% of those new applications will be implemented on PCs and workstations, and a steady 19% will go to minicomputer-based departmental systems.

PCs and workstations are playing a larger role at smaller organizations. Respondents from companies with less than $50 million in annual revenues say that 50% of their applications are written on mainframes today, a number they expect to drop to 41% in the longer term. The PC/workstation share, meanwhile, will rise from 20% today to 28% over that period.

But mainframes will have a significant role in distributed applications. Forty-five percent of IBM users say mainframes will be their "principal hardware

And in Capacity

Still more than 30% of IBM 9370/4300 and 308X/3090 sites say they need more capacity, but less than last year. Many Unisys users say they need more capacity, too.



Source: DATAMATION/Cowan & Co.

orientation for the implementation of [their] newest distributed-processing applications."

Users already seem to be well along in linking PC and workstation networks to their large systems. Eighty-seven percent say their PCs would either increase mainframe work loads or have no effect on them, down slightly from 90% a year ago. In 1990, 84% of survey respondents have already connected at least some of their PCs to the mainframe. And another 10% say they will do so this year or next.

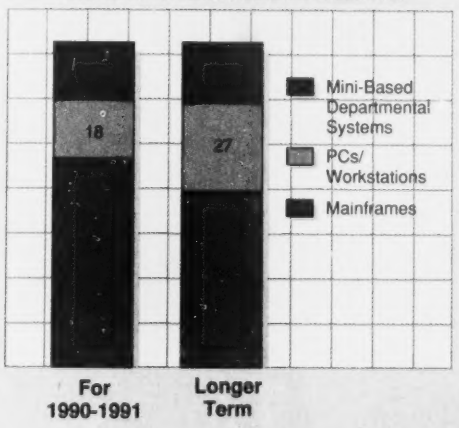
The survey suggests the much-ballyhooed user push for outsourcing has been overstated.

Many users who are planning to buy significantly larger mainframes may be responding to what they see as a bargain. The survey shows that, into the first months of 1990 at least, IBM and vendors of compatibles continued to be willing to cut good deals. Users say Amdahl was the discount leader, offering discounts that averaged 20.3%, up from 16.9% last year. Hitachi Data Systems was second at 16.2%, actually down slightly from last year, perhaps reflecting HDS' ongoing inability to meet demand for its products. IBM offered 11.5% discounts, on average. That was up from 9.9% last year. IBM's discounts have increased every year since 1987, when they averaged 7.6%. The expected increases in average system prices probably take into account vendor discounting.

Also spurring the trend toward larger mainframes, at least among users of IBM and compatible systems, is the acceptance of MIPS-devouring new products such as the MVS/ESA operating system. Although users have implemented ESA more slowly than they at first indicated they would in the 1988 DATAMATION/Cowen survey, acceptance still appears to be broad and strong. Eighty-nine percent of IBM MVS/XA users, for example, say they either already have implemented ESA or plan to do so. The 11% who have no plans to do so is down from 25% last year.

Where New Applications Are Going

PCs and workstations are picking up in companies with $50 million or more in revenue, but even in the longer term, mainframes still lead.



Source: DATAMATION/Cowen & Co.

The MIPS Eaters

Interest also appears to be strong for another MIPS-eater, IBM's new large-system application development environment, AD/Cycle. Among current users of IBM's popular DB2 relational database management system, 17% say they plan to implement AD/Cycle, and another 48% say they will evaluate it.

DB2 continues its inexorable market share assault. Fifty-three percent of users say they plan to implement DB2, up from 43% who said so last year. DB2 was the only mainframe DBMS to show significant gains in the number of planned implementations.

But IBM is not doing so well on the applications side. Only 54% of users say they plan to buy packaged systems and applications software from IBM. Despite the company's considerable marketing and joint venture efforts in this area, that figure is flat from last year.

As users' needs for system MIPS and memory jump, so does their appetite for mainframe disk access storage. Half of IBM 308X/3090 users plan to add disk drives this year, about the same as last year. Thirty-three percent plan to add tape drives, up slightly from 1989.

Clearly, IBM's new 3390 disk drives, which started shipping late last year, are sparking much of that demand. Already, 48.6% of IBM users say that when they buy disks over the next 24 months, they will be buying the larger 3390 variety rather than the 3380. And, as the only announced vendor of 3390-class devices, IBM's share of the entire multibillion-dollar compatible disk business will grow significantly. IBM drives account for 91% of units users are planning to purchase. That's in addition to the 78% of the already-installed units that carry an IBM label.

The Capacity Factor

Although a significant number of users are buying larger mainframes and linking them to PC and workstation networks, there's still pressure on IS hardware budgets. The rate of growth in user hardware budgets continues its downward slide, reflecting the demands most IS organizations are under to produce more with less. Users of IBM's high-end systems say their hardware budgets will grow at a 6.9% annual rate over the next three to five years, down from 7.4% last year and 8.5% in 1987 (DATAMATION's recent 1990 budget survey showed an expected 6% increase in user budgets. See, "Recovery!" April 1, 1990, p.22). Unisys users this year put their budgets' growth rate at 6.1%, down from 6.8% last year. That suggests that plans to buy larger, more expensive mainframes this year aren't distributed evenly through the user base. Instead, they are probably concentrated among larger system users.

The apparent dichotomy of user hardware purchase budgets heading down and mainframe installed value heading up is also partly accounted for

Plans to buy larger, more expensive mainframes aren't distributed evenly through the user base.

by increased interest in leasing. Plans among 3090 users to enter into short-term leases with IBM Credit Corp. or third parties has increased from 12% to 15%.

Also contributing to the impression that the push to bigger mainframes is concentrated among the largest users, probably the 3090 side of the house, is the fact that, on average, the percentage of large-systems users saying they need more mainframe capacity is down. Among 308X/3090 users, 36.5% say they'll need more capacity this year and next, down from 38% last year, but up from 34.4% in 1988. The percentage of IBM midrange users needing increased capacity is down, as well.

The need to do more with less may be a factor in the unmistakable streak of dissatisfaction users are exhibiting toward many of their large-system vendors. Users seem skeptical about mainframe vendors' ability to deliver the right products and services, particularly when it comes to IBM and Unisys. Although IBM chairman John Akers for the past several years has urged his charges to focus on the customer first, 19% of IBM users this year say their attitudes toward IBM are less favorable. That compares with 18% who say they feel more favorable toward Big Blue. IBM's less favorable figure last year was 16%, and in 1988 it was just 10%.

Reflecting that skepticism, most IBM users in the survey say they haven't decided to embrace the vendor's comprehensive Systems Application Architecture. Only 33% of all IBM sites say they definitely will migrate to SAA, up only slightly from 31% last year. AS/400 and 3090 E, S and J users are the strongest SAA backers.

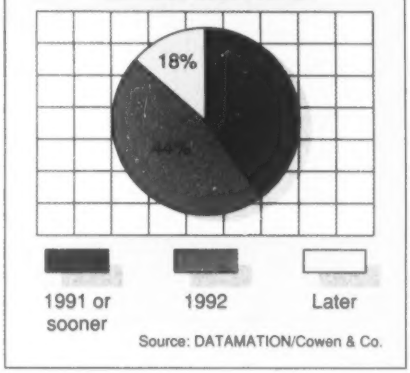
Users are looking askance at IBM, at least in part, because they have little confidence that the vendor will be able to deliver a much-needed successor to the aging 3090 mainframe line anytime soon. Only 38% of IBM mainframe users say they expect the vendor to deliver the Summit mainframe in 1991 or sooner. Forty-four percent predict that the next generation system will materialize in 1992, and 18% say it will be even later. As a result, most users expect IBM to deliver lower average annual price/performance improvements—12.4% in 1990 compared with 14.5% in 1985.

That spells some potential gains for plug-compatible mainframe manufacturers (PCMMs), although some users are clearly wary of the recent changes affecting one vendor, HDS. The PCMMs lost ground in the installed 300xx-class systems market last year, falling from 16% of the market in 1989 to 13% in 1990. But, at the beginning of this year, their star began rising. Twenty-six percent of users say their attitudes toward PCM suppliers is more favorable compared with 7% who say it is less favorable. And 22% of mainframe users say they are considering using a PCM vendor, up from 19% in 1989.

Only user caution concerning HDS clouded the PCM picture. While 38% of HDS customers say their attitude toward the vendor has become more favor-

Summit: Over the Next Hill

Most IBM users expect the 3090 successor to arrive next year or in 1992.



Source: DATAMATION/Cowen & Co.

Larger PC Fueling Market Growth

Although practically three out of four survey respondents say they need more PC capacity in 1990, users expect to buy just slightly more PCs in 1990 at higher average unit prices, according to the PC segment of the DATAMATION/Cowen & Co. 1990 survey.

On the demand level, the projected 1990 capacity increase of 74% is up from 69% in each of the last two years and far outdistances perceived capacity requirements for mainframe, disk storage or departmental systems.

Users say they expect to increase PC unit purchases in 1990 by only 1.2% and see 8% higher average unit prices. This PC unit growth rate is far off the rapid pace of recent years but is better than the 0.3% users cited in last year's survey. And at 9.3%, projected PC dollar shipment growth is better this year than the 5.8% projected last year.

The increase in PC spending seems to be tied to a shift toward larger desktop systems. Users say they expect to spend an average of $3,900 for personal computers this year. That's up from $3,600 last year.

The increase signals a shift toward 80386-based PCs, but not necessarily a trend in favor of IBM's struggling OS/2 operating system. Forty-three percent of users say they'll buy PS/2 model 80, 70, 55 or SX systems this year, up from 34% last year. But only 13% say they expect to use OS/2 in the future. That's down from the 15% that planned to use OS/2 last year. MS-DOS actually gained a point from 79% to 80%, as did UNIX, which went from 4% last year to 5%. Nor are users doing Windows. Sixty-one percent say they have no plans at all to implement the Microsoft user interface; 26% say they already have done so or plan to do so this year.

Users also plan to increase spending on PC networks. Eighty-four percent of users say they'll buy more or the same number of new devices to connect to their networks as they did last year. The primary beneficiary of that trend seems to be Novell Inc., whose leading market share position increased from 31% last year to 37% in this year's survey. Novell, however, is followed closely by IBM as a supplier of local area networks to our survey group.

On the PC packaged software side, market share increases are in the cards for WordPerfect for word-processing applications, Oracle and Borland for database management, and Microsoft and Borland for spreadsheets. A corresponding weakening of market share is projected for IBM DisplayWrite in word processing, Ashton-Tate in databases and Lotus 1-2-3 in spreadsheets, although the latter two still hold very dominant positions in their respective markets.

Although many Unisys users say they are unhappy, few are actually jumping ship.

able in the last year, 27% say they are likely to switch vendors when it comes time to replace their mainframe. That figure is up from 12% in 1989 and reflects user uncertainty generated by the sale of NAS to Hitachi Ltd. and Electronic Data Systems Corp.

The Scoop on Unisys

Also slipping in the eyes of its users is troubled Unisys Corp. Forty-five percent of Unisys users who say their attitude toward the mainframe vendor is less favorable this year are seriously considering switching vendors. Overall, 21% of Unisys users say they are seriously considering switching vendors.

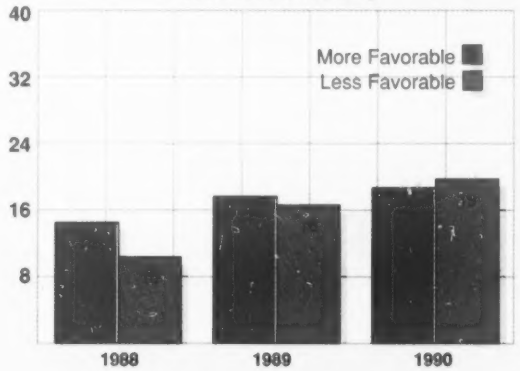
That may not be surprising for a vendor that was plagued by financial problems through most of 1989. But what is somewhat surprising is what Unisys users say is bothering them. Historically, Unisys users have complained loudest about the lack of packaged software available to run on their systems. This year, however, the discontent has clearly shifted to the company's sales force, which apparently has been affected by repeated Unisys layoffs. Asked which of Unisys' products and services needs improving, 63% of users offering suggestions mention the sales staff; just 4% point to the availability of packaged software. Only 17% of Unisys users complained about the company's sales force last year.

Despite the obvious signs of discontent, however, Unisys' large-systems prospects for 1990 look surprisingly good. Although many Unisys users say they are unhappy, few are actually jumping ship. Competitors replaced only 2% of the (former Sperry Corp.) 1100/2200 mainframe installed base last year, up from just 1% the year before. And, on what

What Users Say About Satisfaction

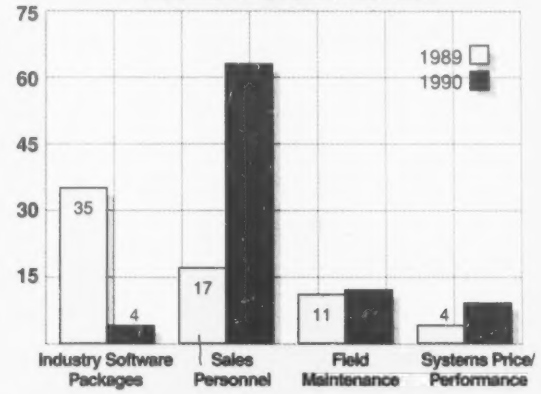
Users at 308X/3090 sites are growing increasingly dissatisfied with IBM

% CHANGES IN ATTITUDE TOWARD IBM 308X/3090 Sites Only



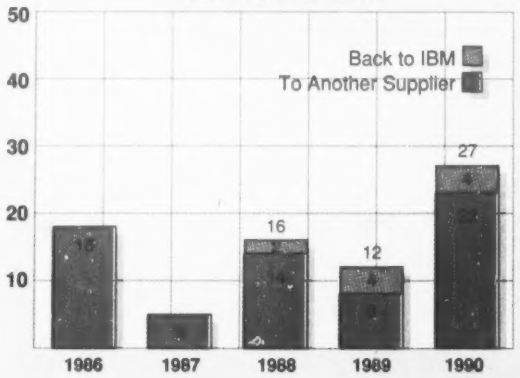
Unisys' sales force takes its lumps

% OF UNISYS PRODUCT OR SERVICE MOST IN NEED OF ATTENTION



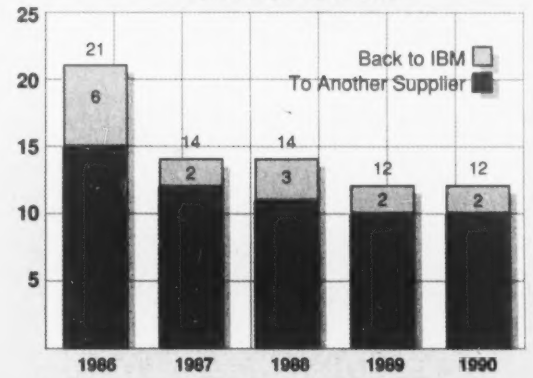
When the time comes to replace systems, more than one in four HDS users intend to jump ship.

% OF HDS USERS PLANNING TO SWITCH VENDORS



The Amdahl base is holding steady.

% OF AMDAHL USERS PLANNING TO SWITCH VENDORS



Source: DATAMATION/Cowen & Co.

used to be the Burroughs Corp. side of the house, things are even more stable. Only 2% of the large A series mainframe installed base was lost to competitors, while none of the medium-scale part of the A series turned over, according to the survey.

Moreover, there seems to be considerable pent-up demand for more capacity in both the 1100/2200 and A series mainframe lines.

On the 1100/2200 mainframe side, 44% of 1100/70 users say they will need more capacity this year compared with 24% last year. That makes them good candidates to move up to new 2200/400 systems. Thirty-eight percent of 1100/90 users say they need more capacity, up slightly from last year.

Unlike the IBM large-systems market, growth in the Unisys base seems largely tied to product cycles. For example, 57% of A9 and A10 series users say they'll need more capacity in 1990 and 1991, up from 39% in 1989–1990. Similarly, 31% of potential V series midrange system users say they need more capacity. Unisys recently announced major additions to that product family.

Unisys, however, does not figure to enjoy the same kind of substantial jump in the dollar value of new systems that is planned by users of IBM and PCM mainframe gear. Users plan to increase the value of their installed Unisys systems by 21% over the next two years, down from 23% in 1989.

Digital is also showing some renewed strength. This year, 15% of survey respondents identify the vendor as their current principal supplier, and 17.8% say Digital will be their principal future supplier of departmental systems. That is a marked improvement over last year's survey, in which 13.2% said Digital was their current principal supplier, and only 13.3% thought Digital would fill that role in the future.

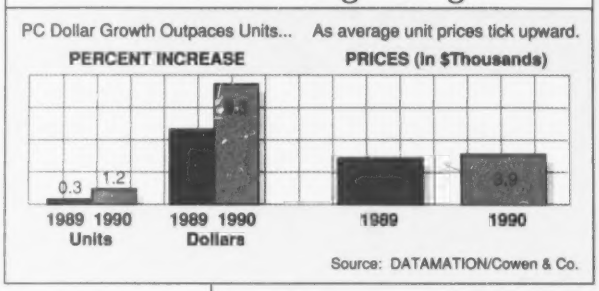
Perhaps even more significant, Digital's new VAX 9000 line appears to represent a competitive weapon for the minicomputer vendor to wield against IBM. Forty-five percent of surveyed IBM users planning to buy a VAX 9000 say the system will replace an IBM box. But only 37% of the VAX 9000s will replace Digital systems.

Just as mainframes are not going away anytime soon, the survey shows continuing—although slowly shrinking—demand for minicomputers. Opportunity seems to be particularly strong for continued growth in spending on IBM's AS/400, but second-tier vendors such as Wang Laboratories Inc. will continue to suffer.

Overall, users say minicomputers and departmental systems will make up a smaller percentage of their distributed and office systems this year than they did last year. The minicomputers' and departmental systems' share of the distributed market shrank from 25.8% in 1989 to 20.5% in 1990, while their share of office systems was down from 17.8% to 15.6%. Gaining in both categories are mainframes and networked PCs and workstations.

Things are rosier, however, for IBM's S/3X line and its successor, the AS/400. Users plan to increase their spending on

PCs Still Showing Strength



IBM Plans Additions for the 3090

Although the DATAMATION/Cowen & Co. large system and midrange user survey indicates that most users don't expect IBM to ship its next-generation Summit mainframe until late next year, IBM can't afford to stand still. Nor does it intend to, if recent remarks by IBM's large-systems executive are any indication.

Bernard M. Puckett, IBM vice president and president of the Data Systems Division, in a recent address to survey subscribers, indicated that Big Blue is planning a series of functional additions and non-CPU performance kickers that the company hopes will allow the aging 3090 line to hold its own against the mainframe competition. Puckett declined to say when IBM will again upgrade the 3090s, although many observers are betting it will be around June, when competitor Hitachi Data Systems Corp. is due to announce a new large multiprocessor complex. Puckett did, however, say what IBM is planning for the 3090:

- A way to tie together more than one mainframe processor complex while maintaining a single system image of the whole machine. Puckett called this "Very High-Performance Interconnect."
- Faster system channels and a way to allow users to separate storage from CPUs by more than the current 400-foot limit. Observers are betting that means new 9-megabyte-per-second channels and an optical channel option.
- Faster memory. Puckett said IBM is hard at work doubling the switching speeds of its memories and building a 64-megabit implementation.
- Functional improvements in the areas of security, system management, application productivity, transaction processing, enterprisewide data access and connectivity.

Puckett says IBM is encouraged about the current mainframe demand picture. Users, he said, are beginning to create enterprisewide networks of workstations and large systems and to use (ESA) to support those networks. And he also threw cold water on the notion that mainframes are dinosaurs: "As the person responsible for the care and feeding of these dinosaurs, the species I see coming out of our breeding grounds looks rather frisky to me."

How the Survey Was Done

Questionnaires for the 1990 DATAMATION/Cowen & Co. survey of mainframe and midrange users' buying intentions were mailed in the first quarter of 1990 to 70,649 large-scale and midrange system users in the United States and Canada. Of that total, 48,038 were mailed to IBM large-system users; 17,861 to IBM midrange system users; 4,318 to Unisys sites and 432 to Cray users. In all, there were 3,683 replies, representing a 5.2% response rate. After the elimination of invalid replies and multiple returns, the unduplicated count of questionnaires used in the survey was 2,756, representing a 3.9% response rate.

S/3Xs and AS/400s by a whopping 85% of the value of their already-installed systems over the next two years, even though the AS/400 is already far along in replacing the installed base of System/3X computers. The figure represents both continued replacement of S/3X systems by the AS/400 and higher average AS/400 system prices.

Minis Hang Tough

The AS/400 already represents 21.3% of the value of all installed IBM midrange systems. But respondents say they expect that to grow to 74.9% of installations within the next two years, making the AS/400 the dominant IBM midrange system. At the same time, users say they expect the average price they pay for AS/400s to more than double this year from $235,000 last year to $479,000 in 1990.

Meanwhile, however, mini vendor Wang Labs has virtually vanished from users' future office system purchase plans. Only 7% of user organizations identify Wang as their current vendor for word processing and text editing. And none say they plan to buy more Wang gear this year or next.

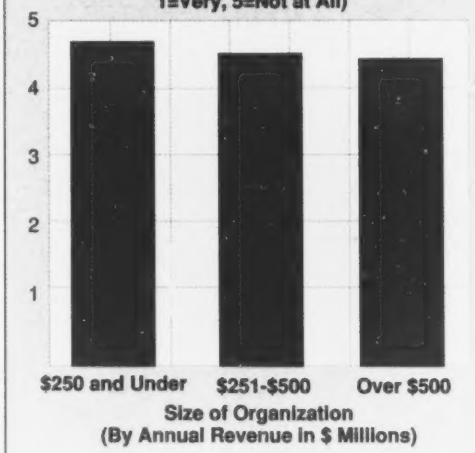
UNIX, meanwhile, seems to be gaining momentum only among departmental systems users. Only 9% of IBM mainframe users deem UNIX desirable, the same percentage as last year. And UNIX on PCs has progressed only slowly. In departments, however, 20% of IBM users say UNIX is desirable, up from 17% last year. Among Unisys users, 34% like UNIX compared with 30% last year.

In the area of technical computing, supercomputer vendor Cray Research Inc. looks to be on the verge of a big year. Thirty-three percent of Cray users say they need more supercomputer capacity, up from 29% last year. And users say spending for Crays will increase over the next two years by 41%, up from 22% last year.

Even rumors of Cray's risky upcoming C-90 product transition and mounting supercomputer competition from IBM and others don't seem to be bothering Cray users. Seventy-eight percent say speculation about new products from Cray and other vendors is having no impact on their supercomputer purchase plans. ▭

Is Outsourcing a Myth?

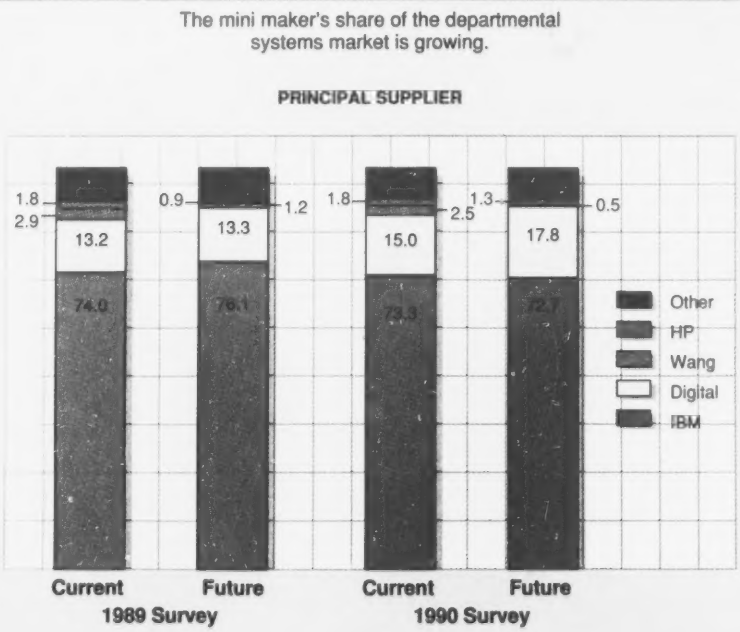
Large-system users show little interest in hiring an outside systems integrator or facilities manager to run in-house operations.



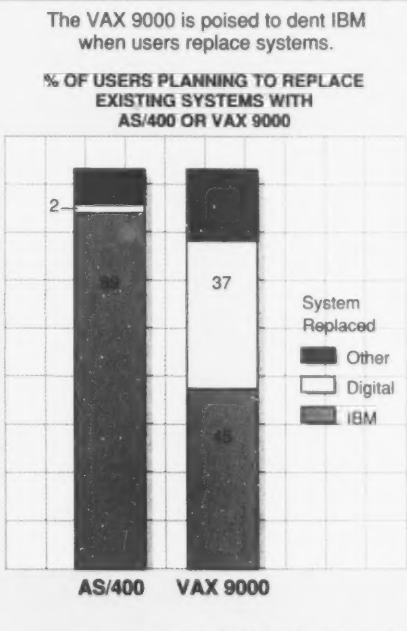
Source: DATAMATION/Cowen & Co.

Things Look Up for Digital

The mini maker's share of the departmental systems market is growing.



The VAX 9000 is poised to dent IBM when users replace systems.



Source: DATAMATION/Cowen & Co.

Ease of Use Coming To PC Graphics

A lack of standards and executive reluctance to dabble in detail once clouded the picture for widespread use of PC presentation graphics packages. But easier to use software may open the way for better corporate ratings.

BY DONNA BARRON

Unlike desktop publishing, which took off like a rocket in the mid-1980s, the market for desktop presentation graphics is so far slow to get off the ground. Where desktop publishing was propelled into the big time by the potent duo of the Apple Mac and Aldus PageMaker desktop publishing software, the so-called desktop presentations market has yielded no such combustible combination of products. But don't count it out just yet.

According to William Coggshall, president of Desktop Presentations Inc., a Mountain View, Calif., market research firm, yearly sales of presentation graphics software for the combined IBM PC and Macintosh market are growing fast, although not at the hyperkinetic speeds of some other PC software. Sales jumped from 530,000 units in 1987 to 950,000 units in 1989. He predicts this figure will reach 1.65 million by 1993.

Applications Galore

If more of the over 35 million MS-DOS computers aren't being used to prepare slides and overheads, it's not for lack of applications software. Presentation graphics packages range from single-purpose programs for producing just graphs, charts or drawings to full-featured packages that can do everything connected to giving corporate presentations from producing 35mm color slides to aiding in speech writing. The three most popular full-featured presentation packages are Software Publishing Corp.'s Harvard Graphics and Lotus Development Corp.'s Freelance Plus for IBM PCs and compatibles, and Aldus Corp.'s Persuasion for the Mac.

These leading graphics packages output to a variety of printers and slide makers, send slides or transparencies to remote service centers via modem or disk for processing and use the computer itself (or in conjunction with a projection device) to present on-screen video presentations.

Coggshall calls these screen-based presentations "electronic glimpses" and claims they represent the fastest growing category of computer-generated visuals. In 1989, Coggshall estimates, computers were responsible for creating 245 million transparencies, 157 million slides and 59 million electronic glimpses. He forecasts that these numbers will grow to 936 million transparencies, 316 million slides and 284 million electronic glimpses by 1993 and that by 1995 screen-based images will exceed the number of computer-generated slides produced.

Mary Grant, training manager for

Photograph by Andy Holbrook/Black Star

ENGELHARD'S GREMBOWICZ: Access to in-house film recorders has simplified and sped up the creation of slides.

Northland Insurance Cos. in St. Paul, is a believer in the electronic glimpse concept. She has been using Harvard Graphics to create PC-based presentations for the past three years. The majority of her creations are employee training programs. However, the availability of a BARCO color projector and SilentPartner, a device for remotely controlling the computer, has made the training room a popular place for presenting computer-based visuals as an attractive alternative to slides or overhead transparencies.

"If someone will be making a presentation away from the site, we'll prepare slides—we have an ImageMaker slide printer hooked up to our PC—but whenever we do a presentation in our own training facility, it's easier and more efficient for us to do a computer-based show," says Grant.

Another device that is likely to encourage the use of on-screen presentations is the recently introduced 480C PC Viewer from In Focus Systems Inc., which the company claims is the first true color liquid crystal display (LCD) panel. The device, which retails for $4,995, sits on top of an overhead projector and reflects whatever appears on the computer screen. It supports up to 640×480 dot-per-inch resolution output from an IBM PC, compatible or Macintosh.

In Focus also markets a standard monochrome LCD panel and, for people who want to take their presentations but leave their computers at home when they travel, the 480GS/2. This monochrome memory-and-store LCD panel stores presentations created with a computer and then runs them through an overhead projector directly from the panel, without need of a computer.

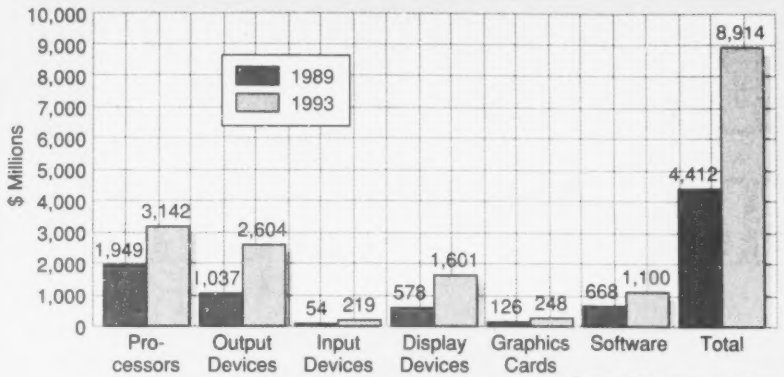
> □ WHEN IT COMES TO MIXING AND MATCHING COLORS, I FEEL LIKE A DOLT.

The Joy of Standards

Although the impressive number of software and hardware products on the market for presentation graphics provides users with an exciting diversity of choices, it also leaves the people who must support and integrate these packages—many of which are based on proprietary file formats—under a considerable burden. IS managers are moving slowly into graphics because of perceived support costs and lack of standards in both hardware and software.

The Worldwide Desktop Presentations Market

Compared with hardware expenditures on processors, cards and display devices, software sales command a relatively small part of the total desktop presentations market.



Source: Desktop Presentations

Some of the concerns are being addressed by software manufacturers, many of which continue to provide increasing numbers of drivers for local output devices and remote service bureaus, thereby reducing the need for managers to limit users to a particular software package or file format. Still, standardizing can offer a number of benefits, including more cost-effective use of shared resources, fewer support calls and uniformity of presentation graphics.

For example, everyone at the Iselin, N.J., offices of Engelhard Corp., a *Fortune* 500 company specializing in chemical technology, uses Harvard Graphics to create their presentations. This makes it possible for employees to share the company's four Matrix PCR film recorders (PC-operated devices—comparable to Matrix's SlideWriter for the Macintosh—that convert images on a computer screen into 35mm slides) in much the same way they would share a departmental photocopy machine.

Access to the in-house film recorders has both simplified and sped up the creation of slides, says Michele Grembowicz, a systems analyst with Engelhard's Presentation and Decision Support Group. Anyone who needs slides creates them at his or her desk with Harvard Graphics, saves the work to a floppy, brings that floppy to one of the centrally located film recorders, pops it into the attached PC (which already has the Matrix software loaded onto it) that sends the data to the film recorder. The user then unloads the exposed film from the recorder and sends it to a local company, which processes and returns the mounted slides—within a few hours, if necessary.

"Initially, we have to provide employees with one-on-one instruction on how to load the camera and use the Matrix software, but people require very little additional hardware support after that," says Grembowicz.

When Engelhard decided to institute a uniform slide format for budget presentations in 1988, being standardized on a single software platform made the transition relatively easy, says Pat Benanti, an executive secretary who designed the templates and training materials to implement the change. "We had 50 people—most of whom had received their software training several months earlier, many of whom had not yet attempted to create their own slides, and none of whom had ever had to design slides to specification—all working on deadline at the same time. I thought I would be swamped with calls, but I got very few," recalls Benanti.

Not Always What You Want

For Engelhard, having everyone using the same software guaranteed uniformity of output from the Matrix film recorder. Other companies outputting visuals to a variety of different devices may not be so lucky, however. "What you want is not always what you get, even when you're dealing with the same file format," says Sam Bayer, developer of the Scan Conversion Object Description Language (SCODL), a file format used to translate the PC screen image for the Matrix film recorders.

Bayer, who is also director of marketing at the Orangeburg, N.Y.-based Agfa Matrix Division of Agfa Corp., believes that SCODL hasn't lived up to its potential for a variety of reasons. "SCODL ought to take a lot of the confusion out of the industry, but because the various software vendors seem to put a little bit of their own personality into the way they support the existing formats, not every SCODL on the software side is the same," he says. Consequently, a SCODL file generated in one program often appears differently when loaded into another, even

though Matrix film recorders can generate slides from all SCODL files.

Bayer recently formed the Agfa Imaging Center Association, an organization he says is helping to ameliorate this problem by acting as a liaison between people with imaging problems and the software companies.

Lack of standards is also a problem when exchanging graphics among various software packages used to create the images prior to output. The closest thing to universal graphics formats are the computer graphics metafile (CGM) on the PC and PICT on the Macintosh, formats many packages can import and export. However, even CGM files tend to differ from program to program, and when files are moved surprises are possible. Part of the text may be missing, only part of a graphic may appear or the colors can be off. Although most programs can read PICT files, the look of the graphics may change as files move between programs because of the differences in formats or style sheets within the programs.

Several software companies are addressing the problem of file incompatibility. Micrografx Inc. recently announced XPort, a translation engine, which will initially provide translations between CGM, PICT1, PICT2, AutoCAD's DXF, Digital Research Inc.'s GEM and Micrografx's own DRW formats.

Inset Systems Inc.'s upcoming HiJaak2 conversion utility, which should be out this summer, is expected to add vector conversions to the already extensive list of graphics translators in the current version of HiJaak. Digital Research also announced a licensing agreement with Inset Systems that will allow Digital Research to incorporate conversion utilities for importing and exporting files in the Adobe EPS, CGM, DXF, GEM, Lotus PIC, Microsoft Windows, TIF, WMF and Z-Soft PCX file formats into its entire line of GEM graphics programs.

□ WHAT YOU WANT IS NOT ALWAYS WHAT YOU GET, EVEN WITH THE SAME FILE FORMAT.

For managers who have to deal with it, the issue of disparate graphics formats and file incompatibility can present frustrating and even insurmountable problems. But, then again, only about 10% of IBM PC and compatible users today are using their computers to create graphics, and even fewer are preparing the kinds of sophisticated graphics that involve dealing with multiple file formats.

"While we in the computer industry are dazzling one another with spectacular color images and weighing the subtle differences in speed or ease of use which make one presentation software package superior to another, most of the world doesn't even realize this technology exists," says David Peltz, publisher of the "Macintosh Engineering and Scientific Report" and president of CADventures, a Chatsworth, Calif., computer graphics consulting firm.

According to Peltz, the most popular presentation in use today is a black-and-white transparency that's gone through the Xerox machine to make an overhead. "Presentations, for the most part, are still a monochrome world. If I take even the simplest color transparency or slide and use it outside the computer community, the first reaction I get is almost invariably 'Wow, how did you do that?' " says Peltz.

Digital's à la Carte Graphics Menu

When it comes to implementing presentations throughout an organization, figuring out the best way to create the visual materials may be only half the battle. Effective distribution of those creative materials also looms as an important challenge.

"We needed a way to quickly and inexpensively get our slide presentations out to our sales force," explains Laurie McCabe, a program manager with Digital Equipment Corp.'s Media Communications Group. Ordinarily, after a slide presentation is created, it has to be duplicated, packaged and warehoused for future ordering, says McCabe. If the presentation requires updating two weeks later, the whole process has to be repeated. Compounding the problem is the fact that, after a slide show is created, the people who need it most often don't know it exists or where to find it.

Digital's solution to this distribution chaos is the On-line Presentation Access Library (OPAL), a computer-based presentations catalog introduced early this year that operates over Videotex, an electronic library networking software marketed by Digital.

Presentations for OPAL are put together at the company's corporate headquarters in Maynard, Mass. Content is developed by the marketing department, and visuals are designed and executed by the art department, using either dedicated Genigraphics equipment or 35mm Express, a DOS-based presentation software package from Business & Professional Software Inc.

"We chose 35mm Express partly for its ease of use and partly because it provides drivers to a wide variety of output devices," says McCabe. An equally important feature was 35mm Express' ability to accept Genigraphics files, making it possible for Digital's art department to simply modify many existing graphics for use on the PC rather than having to completely re-create them in a PC format.

OPAL is currently available to anyone on Digital's corporate network. After reading a description of the available presentations, OPAL users can select and send themselves the presentations they want via electronic mail. They are offered the choice of either a standard presentation, which can only be used as is without customization, or a 35mm Express version, which can be customized using 35mm Express software on a local PC.

Downloaded files of either variety can be output to local printers or film recorders, or electronically forwarded to Digital's corporate media communications department, which will make up slides or transparencies and return them within 24 hours.

In addition to complete presentations, the OPAL catalog includes templates and guidelines designed to help users maintain established corporate standards when creating their own presentations. An unexpected side benefit of OPAL, says McCabe, is that it has encouraged many PC users to begin creating slides on their own.

OPAL currently contains about 60 entries. When the program reaches maturity, McCabe expects it to include 200 to 300 presentations, including some that are not generated within Digital. "We'll also serve as a slide exchange bureau for presentations created by people in the field," says McCabe. "We may not house all these presentations, but we can at least provide a service for letting people know who has created what presentations and where they can be found."

Even many experienced computer users prefer not to deal with the complicated issues involved in designing presentation graphics or working with color. According to a survey by *PC Week* magazine, one of the most sought after qualities in a presentation graphics package is preformatted templates.

"Most of the time, when I sit down at my Macintosh to start a new presentation, I just grab one of the templates that came with [Microsoft Corp.'s] PowerPoint, save it with my file name, and start cutting and pasting into that outline. It's just such an easy way to do it," says Robert Lucas, a project leader for software developer Applied Computer Services Inc. of Simi Valley, Calif.

The Power of Persuasion

Another package packed with predrawn presentation templates—Aldus Persuasion—has become the standard for Macintosh users at FMC Corp., a large multinational company in the agricultural, industrial chemical and defense-contracting businesses.

"The people preparing presentations here are typically managers, professionals, knowledge workers and secretaries—people who have had very little training in what looks good with what," says Christine Leatz, FMC's Chicago-based manager of office technology worldwide. Not only do FMC employees make heavy use of Persuasion's packaged templates but in-house graphic artists have developed special FMC templates of their own featuring the FMC logo. These have been distributed throughout the company.

"We're not so much concerned about our presentations being uniform as we are that our logo be the right color and size and be placed in the right position. We also have strict security guidelines and need to be sure people include the appropriate information, such as copyright, on their slides," says Leatz.

One of the reasons Leatz decided to standardize on Persuasion was the fact that a Microsoft Windows-based version is expected out soon for the PC. "Our people on PCs are currently using Harvard Graphics and Lotus Freelance, but we've found that these require a far greater amount of MIS support than Persuasion because they're not Windows-based and don't use a graphical user interface," says Leatz.

A Windows version of Microsoft PowerPoint is expected out soon, and it seems likely that the porting of easier-to-use Macintosh products to Microsoft Windows on the PC will be a continuing trend. Then, the pending release of Microsoft Windows 3.0 should open the market to many new graphics products, including presentation packages.

Still a Support Function

But even with easy-to-use software on the horizon, there's no guarantee that desktop presentations will ever become as popular as spreadsheets or word processing. Part of the problem, particularly among PC-compatible users, is that—unlike in the case of desktop publishing—the majority of the people who need presentation graphics are not the people who prepare them. The preparation of visuals continues to be largely a support function, and this is not likely to change.

Says CADventures' Peltz: "When word processing came out, you had WP pools. Everybody wrote things down on paper and took it to the pool. Presentations are still for the most part that way. Instead of a WP pool, there's the art department."

What will change is the availability of graphics-capable hardware on the typical desktop. As computer hardware prices continue to come down—and more powerful, higher resolution graphics-based systems increasingly replace older, less functional equipment—many analysts expect to see a commensurate increase in the number of presentations being created on the desktop.

The ability to run presentation software over a network should further accelerate widespread use of graphics. Lotus recently announced that a network version of Freelance Plus will be available in the second quarter of this year. Digital Research is also expected to release a networked version of its Presentation Team product fairly soon. Networkable software makes it easier for an administrator to do maintenance updates and ensure that everyone is using the same version of the software. It will also give users the ability to share expensive output devices.

Whether it is the nature of presenters to procrastinate or simply a desire to provide the most up-to-the-minute data, the preparation of presentation materials remains a rush-rush affair. It is probably this, more than anything else, that will fuel the demand for desktop control of presentation graphics. After all, how many art departments can you find open at 3:00 in the morning? And how long can you wait for changes when your presentation is only hours away? ▭

Donna Barron is a freelance writer based in Hollywood, Fla., who covers the computer industry.

Products Mentioned

The following is a list of presentation graphics products mentioned in this article:

Aldus Corp., Seattle
(206)-622-5500
Aldus PageMaker
Aldus Persuasion
Circle 101

Barco Inc., Kennesaw, Ga.
(404)-590-7900
BARCO color projector
Circle 102

Business & Professional Software Inc., Cambridge, Mass.
(617)-491-3377
35mm Express
Circle 103

Digital Research Inc., Monterey, Calif.
(408)-649-3896
GEM
Circle 104

In Focus Systems Inc., Tualatin, Ore.
(503)-692-4968
480C PC Viewer
Circle 105

Inset Systems Inc., Brookfield, Conn.
(203)-775-5866
HiJaak 2
Circle 106

Lotus Development Corp., Cambridge, Mass.
(617)-577-8500
Freelance Plus
Circle 107

Micrografx Inc., Richardson, Texas
(214)-234-1769
XPort
Circle 108

Microsoft Corp., Redmond, Wash.
(800)-426-9400
Microsoft Windows
PowerPoint
Circle 109

Presentation Electronics Inc., Rocklin, Calif.
(800)-888-9281
SilentPartner
Circle 110

Presentation Technologies, Sunnyvale, Calif.
(408)-730-3700
ImageMaker
Circle 111

Software Publishing Corp., Mountain View, Calif.
(415)-962-8910
Harvard Graphics
Circle 112

USAA's Image Of Success

This big insurance company attracted loads of attention when it first cranked up its Texas-sized image system along with partner IBM. Now two years into the project, the USAA knows what to expect from this technology of tomorrow.

BY EMILY LEINFUSS

The United Services Automobile Association is one of the most image conscious companies in the world. This aggressive San Antonio-based insurance and financial services firm projects that, by the year 2000, it will have 20,000 users of image-processing terminals. A pioneer in optical storage for three years, the USAA clearly has one of the most ambitious imaging strategies anywhere.

For the past two years, IBM has worked on site with the USAA, phasing in what is now called IBM's MVS/ESA ImagePlus system. Some 2,000 workers now use 1,400 imaging terminals every day, and two IBM 4390 mainframes serve as system controllers. The image system automates certain customer service operations in the Property and Casualty Policy Service and Underwriting (P&C) area, which represents about 80% of the USAA's business.

The Paper Trail

The USAA's interest in imaging is part of an ongoing search for efficiency. The company was started in 1922 by an army officer who bought a new car and found that insurance companies would not insure him, or anyone else, who moved every two or three years. So he formed a club with other army officers to insure each other. That club became the USAA, which now serves about 2 million military officers, former officers and their dependents.

Unlike other insurance and financial services companies, the USAA does not have agents in the field. Customers deal directly with the home office for any insurance transactions, creating a huge volume of mail and telephone calls.

The foundation for imaging at the USAA can be traced back to a mission set forth in 1969 by chief executive officer Brigadier General Robert F. McDermott, who wanted to see the USAA transformed into a completely paperless company. The first steps began in the 1970s when the USAA improved its manual paper-handling procedures and switched the bulk of its business from mail to toll-free telephone service. Today, the USAA operates the largest automatic call distribution telephone service in the world.

THE USAA'S PLESUMS: A company can save $2,500 per person a year by reducing paper use.

Photograph by Kevin Vandiver/Black Star

By the early 1980s, image systems had just started to emerge, as had many other computerized solutions to traditional paper pushing. As a way to quantify its plans for all computer systems, both imaging and otherwise, the USAA created a Long Range Systems Plan (LRSP) to modernize systems and procedures. By 1981, the USAA was ready to implement McDermott's mission to eliminate paper.

The LRSP first began to take shape in the form of the USAA's Automated Insurance Environment (AIE), which was fully implemented in 1986. According to General Donald Lasher, president of information services at the USAA, the AIE is a highly integrated and interconnected system that resides on IBM 3090 mainframes. It processes over 6 million IMS transactions every work day.

With the AIE, USAA agents enter information into the system as they collect it from customers holding homeowner, automobile and other USAA insurance policies. Full im-

plementation of just the P&C portion of the AIE cost $130 million and took more than five years.

Lasher says the USAA has always envisioned imaging as part of its overall systems plan. The first imaging test, a prototype from St. Paul-based 3M, was in operation from 1984 until 1987 and served about 2% of the P&C policy service customers. Another test system, from FileNet Corp. of Costa Mesa, Calif., was in use from January to June of 1986 and served about the same percentage of customers.

Both systems proved the viability of image processing, but they were replaced in 1987 by IBM's more massive MVS/ESA ImagePlus system. At the time, the USAA and IBM seemed unlikely project partners in image processing; at the time, IBM didn't even have an imaging product to sell.

The Giant Awakens

Big Blue's entry into commercial imaging had a lot to do with the USAA's ambitious plans. By early 1987, the USAA was ready to implement image processing on a large scale, and the firm requested proposals from nine companies.

One requirement of the USAA's proposal process was that the selected system already be, or have the potential to become, a standard product, says Charles A. Plesums, director of image systems at the USAA. If the firm needed a part, or

> ☐ **CUSTOMERS DEAL DIRECTLY WITH THE HOME OFFICE FOR THEIR TRANSACTIONS.**

combination of parts for the system, Plesums wanted to be able to draw on an existing inventory. Anything the USAA needed, he reasoned, should be readily available from a salesperson.

After the USAA issued its requirements, IBM put together a system proposal that cleared the hurdle of standard components, says Robert Cole, MVS ImagePlus market development manager at IBM in White Plains, N.Y. According to Cole, IBM took known hardware and software entities and assembled the kind of system that the USAA wanted. Part of that software included code that IBM purchased from the USAA. This software had managed the hierarchical filing of image folders used in the earlier FileNet test system.

Needless to say, IBM was eventually selected as the winner. "It was an easy choice. [IBM] was the best technically and financially," Plesums says.

The USAA first approached IBM about imaging in 1982, but Big Blue dismissed the technology as not practical. "But, by the time we actually did go out for a bid, the sleeping giant had awakened," says Plesums. IBM's marketing arm had gotten the message that image processing was ready to go commercial. The technology had been investigated within IBM's labs since the early 1970s and was well understood by the company.

Trading Ideas

Cole says that each of the two companies brought ideas to the table that the other had not considered. IBM, for example, introduced to the USAA the idea of storing images centrally and using standard communications products for distribution to remote sites. The USAA brought to IBM a great deal of information on the characteristics that a heavily used, working imaging system should have.

As for the implementation, IBM was able to finish the project on schedule and within budget, despite the considerable technical challenges associated with developing for a new platform with heavy, on-going user involvement.

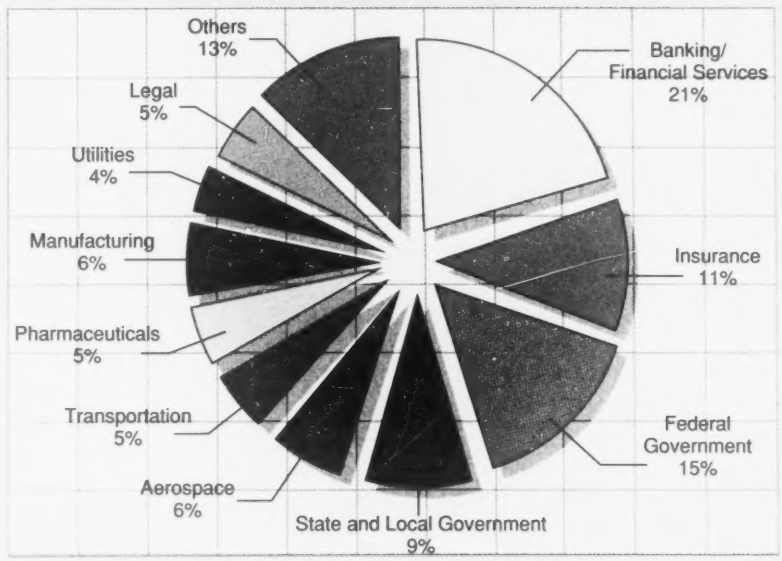
Now that the MVS/ESA ImagePlus system at the USAA has established a track record, the USAA sees the benefits boiling down to cost savings, improved productivity and improved service. Plesums says the total annual cost for implementing, operating and maintaining the USAA image system—or any large-scale image system, for that matter—is about $5,000 per terminal. He quotes the typical direct cost savings in the range of $2,500 to $5,000 per user, per year, depending on how paper intensive a company is. Those savings are realized by eliminating such things as file cabinets, file folders, file clerks, delivery clerks and mail clerks, says Plesums.

Thanks to the LRSP, the USAA had already eliminated a lot of its paperwork, so it was looking at the lower $2,500 figure. "It would be pretty hard to put a $5,000-per-year terminal on somebody's desk when the savings are only about $2,500," says Plesums. At the USAA, two users share each terminal.

Besides the savings associated with paper and related costs, the USAA also factors in savings attributed to higher worker productivity. According to USAA studies, the system saves the company approximately $1 million for every one percentage point gain in productivity. Because departmental managers are reporting productivity gains of between 2 and

Where Imaging Counts Most

By 1989, a total of 515 image-processing systems had been installed in the United States. Total market size was $519 million, with banking and financial services accounting for the largest market share.



Source: International Data Corp.

10%, Plesums figures that 5% is a good conservative figure to use.

With 2,000 workers using the system now, a 5% boost in productivity is roughly equivalent to 100 people. Considering that the USAA's imaging work force consists of salaried professionals with annual benefits and overhead costs running at about $50,000 per person, the yearly savings attributed to higher productivity come out to be $5 million, says Plesums.

Holdover, a measure of backlog of work, is another tool the USAA uses to gauge worker productivity. Holdover used to be counted manually, but the imaging system can report on holdover up to the minute. Although the USAA has not quantified the exact extent of holdover reduction due to imaging, Linda Clay, a senior policy service representative at the USAA, has noticed a definite improvement. "Holdover is a lot less since we started [image processing]," she says.

Wedding Imaging to IS

Before getting its image-processing system up and running, the USAA did confront several technical challenges, not the least of which was deciding how the new imaging system would work with the company's existing IS operation. Plesums says that true technical integration of imaging systems and the Automated Insurance Environment system was simply not feasible.

☐ THE CEO WANTED THE USAA TRANSFORMED INTO A COMPLETELY PAPERLESS COMPANY.

"Visualize the problem," says Plesums. "I'm supposed to go to management and say, 'We've got this neat, new technology and would like to integrate it into our existing program. So why don't you stop this long-range system plan? That way we can rewrite all the programs so we can try this new technology—which no one else is using.' "

Plesums took a more practical approach. The AIE was already designed to deal efficiently with most matters associated with customer letters and correspondence. Yet the USAA had no practical way for its work force to actually see the hard copy when it was most needed—like when a customer was on the phone following up on an obscure written request from the week before. So the USAA implemented the system by setting up separate imaging terminals alongside existing AIE terminals. Today both the AIE and image systems work well together, even though they are not truly integrated.

The USAA soon discovered that imaging forced a number of other system changes throughout the organization. The way the company handles mail, for example, changed radically. A machine opens the envelopes and a clerk extracts and arranges the pages. The mail then moves to a mail analyst who identifies the customer in the computer and determines the mail routing.

The Mail Analyst's New Routine

Before the imaging system was put in place, the mail analyst would write the routing information onto the letter. Now, the analyst enters an IMS indexing number into the transaction processing system using a code that describes the document. A terminal then presents to the analyst the known data about the document, such as date received, customer, description and routing information. The mail is then scanned into the imaging system and is identified by a client number. Thus, the imaging system compiles a complete index of all available documents.

Most users find the new imaging system easier to work with than the old paper-clogged system. According to service representative Clay, all users have their own data terminals and share imaging terminals as they need them. "It's really no problem," says Clay. "It was a lot of hassle having to open mail and sort it. This way, when it comes into our units it has already been sorted. That piece of mail becomes a permanent piece in our system, and it very seldom gets lost."

Learning How to Ask

Training specialist Cornelia Flores, the first image-processing trainer at the USAA, wrote a handbook for users. She agrees with Clay that most workers find the system easy to use. "After I show the user how to ask for the document on the IMS terminal, the first impression they usually get is 'This is fantastic.' You ask for a document and it comes in anywhere from five to 20 seconds," says Flores.

Flores admits that some users have difficulty learning the maintenance and routing functions of the system. Those functions require users to remember the most choices and elements.

Although there is much to admire and learn from the USAA's image application, it is important to remember that the USAA was the forum through which IBM developed, prototyped and introduced

When Optical Storage Courts Danger

United Servies Automobile Association employees routinely destroy more than 99% of the original paper documents they scan into the company's image-based insurance system. The only papers they don't obliterate are certain legal documents such as titles to cars and papers that show power of attorney. Every other form of correspondence—even post office receipts—are no longer saved.

A bold move? Perhaps, says Louis Olenick, a specialist in computer law and a partner at Olenick and Yarnell in New York. According to Olenick, the USAA is relying on the best available evidence rule in deeming the practice of destroying original documents a proper one. Under the rule, if the original document is available, then it must be entered as evidence in the case of a legal dispute. If the original is destroyed after entry into an imaging system, then the image becomes the best evidence available and the official business record.

Imaging is the third wave of electronic data. The first was microfilm; the second, computers; and now there is optical storage. The law eventually embraced the technology in the first two waves, says Olenick. However, it is still too early in the game for optical storage. "There is a risk that the courts will not accept an image document. Image is at the cutting edge right now," he says. In the meantime Olenick outlines three common sense approaches to using images.

1. Consider keeping the paper originals. Unless it's absolutely clear that you can introduce into court image documents in exactly the same way that you would introduce the paper originals, then consider keeping the originals around, perhaps stored off site.

2. Be aware that the courts will ask about image security. What are the procedures for getting data into the system? Who has access to the data? Could they be changed? Is it the right document? "You may have to have somebody knowledgeable who can describe all that in court," says Olenick.

3. Remember that the courts will be more likely to accept nonerasable or nonalterable optical technology rather than erasable systems. According to Olenick, the federal courts have ruled that companies can introduce electronic records. Yet the wording of earlier court decisions has been vague, referring to "electronic computer storage" but not to optical storage in particular. Most attorneys would advise that until this is clarified, some doubt remains about the legal validity of documents stored on optical media. Says Olenick: "It has not been put to the test."

its ImagePlus MVS/ESA product. So says Scott McCready, director of image management technology services at International Data Corp. in Framingham, Mass. "USAA is IBM's showcase," says McCready. "When you have a showcase, it should be fairly representative of what you can do for another customer. But USAA is not a representative solution."

The USAA's unique customer service structure sets the firm apart from most insurance companies, says McCready. Because it sells directly to customers, the USAA's policy types are not typical. Consequently, most other insurance companies have different needs than the USAA. In addition, potential users of image-processing systems should realize that success is possible on a much smaller scale.

Another aspect of the USAA that sets it apart from others is the extent of IBM's involvement in the project. "IBM learned about image [processing] on the job and dedicated an incredible amount of human and other resources to doing that job right," says McCready. Other firms may be hard pressed to find similar vendor involvement.

McCready advises IS managers in companies contemplating imaging to take a cue from the USAA and solicit senior management support from the beginning. He says the USAA's accomplishments in image processing could never have happened without the support, encouragement and technical savvy of its senior management. "Unless you have senior management completely behind you, you are wasting a lot of time," McGready says.

☐ BY THE TIME WE ACTUALLY DID GO OUT FOR A BID, THE SLEEPING GIANT HAD AWAKENED.

An Image for Tomorrow

Time is something that the USAA can play to its advantage. The USAA went into image processing anticipating productivity gains and work flow improvements. With those already realized, the company is still waiting and watching to discover advantages it didn't expect. "There is a lot of serendipity in the use of [imaging]," explains Lasher. "When you bring the technology into the business place, you begin to discover all kinds of neat things." For example, Lasher sees the imaging system as an ideal foundation for an enterprisewide bulletin board.

With a successful track record behind it, the USAA is looking at expanding the use of image processing beyond P&C claims processing. Other areas being considered for the technology are the company's life insurance business and the credit card operation, located in Tulsa, Okla.

Of course, in its heavily researched and methodical way, the USAA will proceed on these plans only if the benefits of image processing continue to accrue. Then the company will implement imaging systems application by application as it deems them cost effective. ▭

Emily Leinfuss is a freelance writer based in Sarasota, Fla.

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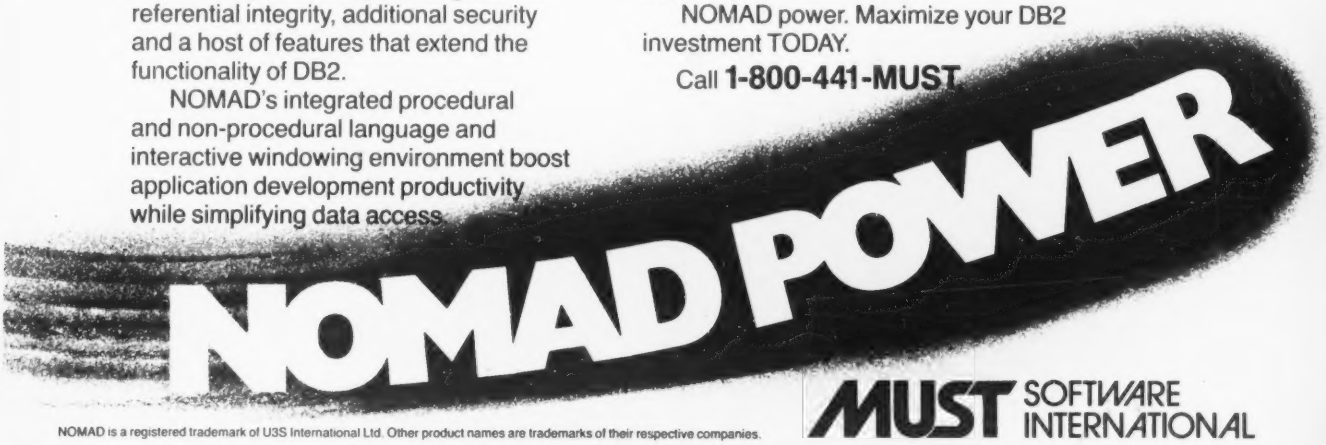

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Circle 52 on Reader Card

Why IS Execs Feel Left Out Of Big Decisions

If this is truly the age of the chief information officer, why do so many IS executives feel left out of the corporate planning process? This recent IS survey suggests some answers.

BY GERALD L. HERSHEY AND JOHN L. EATMAN

Top IS executives typically agree that they should be involved in the development of overall business plans for their firms. This opinion is usually backed up by consultants and survey results stressing that IS executives must be part of the corporate planning team if the systems they develop are to serve organizational strategy.

Many have also argued that the manager in charge of a firm's information systems should have a planning role in the organization similar to that of other top-level functional executives in such areas as marketing, production and finance. Such a role might typically carry a title of vice president of IS or chief information officer (CIO). The top executive would then, the argument goes, be actively involved in corporate strategic planning.

But, years after the introduction of the CIO concept, relatively few IS executives have reached the top echelons of corporate management. Few participate in corporate planning, and many are asking questions. Do IS executives with titles positioning them higher up the corporate hierarchy play more active roles in corporate planning? How well does top operating management understand IS missions and roles? Are there differences in corporate practices or IS management in firms where IS executives are at the top echelons of management compared with firms where the IS executive is at a lower level?

We at the University of North Carolina, Greensboro, attempted to answers these and other questions by surveying the top-level IS executives in 150 of the largest U.S. information systems departments. A total of 58 top IS managers provided responses to the survey.

Despite a few notable exceptions, the answers reinforce earlier studies that have been done on IS management. Yet they also build on these findings by providing some clear guideposts for IS managers to consider as they plan their careers in the 1990s.

As a starting point in the survey, we sought to determine whether IS executives felt they were understood by top management. Respondents were asked to rate on a 5-point scale (5 = a very high level of understanding) the extent to which the organization's top executives were educated about and understood various aspects of information systems. The results were as follows: IS priorities (3.4), IS activities (3.1), IS contributions (3.1), potential IS roles (3.1), IS constraints (2.8), IS personnel needs (2.7).

Understanding IS Practices

The scores show that IS executives do not think that top management in their firms understand IS issues, priorities and practices. If this is true for these very large companies with sophisticated systems and large IS expenditures, IS executives within smaller organizations with much less budgetary clout may have even more trouble signaling their priorities to executives.

We also asked the respondents to highlight those IS issues that consumed most of their time and attention over the past five years. The managers were next asked what they expect to see as major changes for the next five years. (See chart, "Where IS Spends Its Resources.")

Although there are some similarities between the two lists, there is a definite difference in focus. On the one hand, support for end-user computing, a major consumer of IS effort over the past few years, doesn't even make the list as an area expected to absorb IS attention during the next five years. On the other hand, there is a noticeably higher orientation in the long term toward building closer links between IS and the firm's business by developing a more business-oriented IS staff and through more support of specialized projects.

The job titles of survey respondents fell into three groups that show the respondents' relative positions in the organizational hierarchy. The top group includes titles such as senior vice president and corporate vice president. The second group encompasses all other vice presidential titles, including vice president of IS. (These two groups comprise 34 executives, or nearly 60% of all respondents.) The third group is made up of senior IS managers with other titles, such as director of IS.

☐ TITLES SEEM TO HAVE LITTLE MEANING WHEN IT COMES TO CORPORATE STRATEGY.

The survey uncovered some interesting details on direct-reporting relationships. Fifteen IS executives report to top operating managers (chief executive officer, chief operating officer, president, chairman and vice chairman), and 19 report to people with titles such as executive vice president and administrative vice president. Thus, a total of 34 respondents—nearly 60%—report to executives with top managerial responsibilities. The remaining 24 IS executives report primarily to executives in the financial area.

No matter who reports to whom, titles seem to have little meaning when it comes to corporate strategy. Despite the fact that nearly 60% of the executives have titles that would seem to reflect substantial involvement in corporate planning, only 27% said they are either "involved" or "very involved," in this area. Another study, conducted by New York City-based Coopers and Lybrand, (See "Careers in Crisis," August 15, 1989 DATAMATION, p.12) shows similar disconnections between IS and business planning; only 20.4% of those respondents feel IS and business planning are integrated.

What makes such low figures even more astounding is that these managers are from the 150 firms with the largest IS investments in the nation. Clearly, title alone is no assurance of heavy involvement in planning corporate strategy and direction. Therefore, simply elevating the title of the IS executive may not change the place that IS holds in the organization.

Where Titles Count

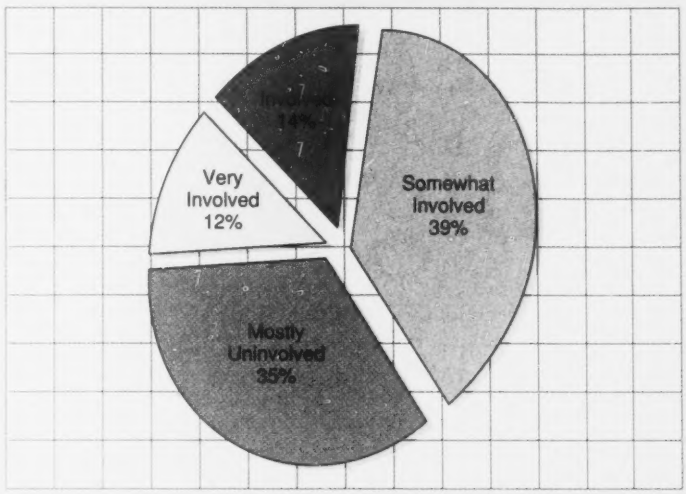
If titles mean little to the organization, they do mean something to the IS executives themselves. IS executives with higher-level titles have a different management focus than those at slightly lower levels. Even though higher level IS execs do not always feel they are adequately involved in the planning process, they tend to be more involved than their colleagues positioned at lower levels.

☐ PROVIDING EXEMPLARY SERVICE DOES NOT, IN ITSELF, LEAD IS TO THE BOARDROOM.

The higher the title of the IS exec, the greater the likelihood that the IS department and the firm's management place a high emphasis on cost control. It is probably not surprising, therefore, that these top IS execs are more likely than their colleagues with lower titles to point to ongoing efforts to control costs over the last five years. At the same time,

Out of the Planning Picture

Relatively few IS executives feel truly involved in corporate planning.



Source: University of North Carolina, Greensboro

however, the top IS execs are more likely to lobby for a higher percentage of revenues to be directed toward IS activities, and the companies they work for typically have IS budgets representing a higher percentage of corporate revenues than do those of the other respondents.

Top IS executives who report to top-level officers are also much more likely to involve the human resources department in recruiting and training IS staff. And they are very likely to emphasize the competitive positioning of IS and to seek out strong executive support for IS within their organizations.

Where IS Is Involved in Planning

Certain characteristics of both the IS department and the companies they are part of can increase the chances of IS participation in business planning. We found several strong correlations between involvement with business planning and situations in which:

- The firm tends to lean toward centralized management and is highly structured.
- The firm places heavy emphasis on long-range planning.

□ IS EXECS WITH HIGHER-LEVEL TITLES HAVE A DIFFERENT MANAGEMENT FOCUS.

- The IS executive feels a high level of top management support for information systems.
- The IS unit has a clear mission in the company.
- The IS executive emphasizes competitive positioning of IS and the planning of systems to fit business expansion plans.
- The IS unit develops and uses a strategic plan for IS.

In indicating that more decentralized and less structured companies are not as likely to include IS executives in business strategic business planning, the study contradicts suggestions reported by Thomas Lodahl and Kay Lewis Redditt in their report "Aiming IS at Business Targets," (February 15, 1989 DATAMATION, p. 93). Instead, the picture that emerges suggests that firms with more centralized management, clear structure and missions, and emphasis on long-range planning are more likely to involve top-level IS executives in overall business planning.

In short, these results portray a highly structured organization that can be summarized by the following model:

Where IS Spends Its Resources

When asked where they directed their time over the last few years—and where they plan to focus in the 1990s—IS professionals ranked these items on the top of their lists.

Top Concerns for 1985-1990

- Support end-user computing (44%)
- Use of IS for strategic purposes (42%)
- Control IS costs (34%)
- Connect IS to business plans (31%)
- Plan for integration of IS (29%)

Top Concerns for 1990-1995

- Need for business-oriented staff (51%)
- Increased interaction with users (45%)
- Better understanding of business missions/projects (45%)
- More support of specialized projects/systems (39%)

Source: University of North Carolina, Greensboro

IS executives most heavily involved in corporate business planning are ones who report to very high-level superiors, have high-level job titles, operate in centralized organizations, emphasize cost control, watch over reasonably large IS budgets (as a percentage of revenues), focus on long-range and strategic issues, adopt a corporate perspective and use other corporate services such as the human resources department.

In many ways, this company model is the antithesis of what many IS managers expected in the past: the classic high-growth company, the IS unit that operates as a profit center, or the highly decentralized holding company. Although no one factor can be singled out as the key to IS involvement in corporate planning, an organization that doesn't have a clear understanding of the roles played by its individual departments is less likely to include IS—and perhaps other service units—in its strategic planning.

How Top Managers View IS

How the company assesses IS performance plays an important role in determining how much influence IS executives have in business planning, our survey reveals. IS executives have a greater role in forming strategic decisions in companies whose top management takes into account the following criteria to evaluate IS:

- The amount of value added by IS,
- The importance of developing innovative and strategic IS applications,
- The usefulness of IS in decision making.

The survey findings also indicate that when IS executives are more heavily involved in overall business planning, top management becomes more attentive to strategic and value-added applications of IS. But selling top management on the strategic uses of IS requires direct and meaningful connection to the corporate planning team. Unless the IS function achieves a high level of involvement in business planning, the evaluation of IS by top management tends to remain more like that of a secondary service function.

Good Deeds Are Not Enough

Two other criteria that many IS executives consider extremely important to their careers surprisingly did not correlate in any significant way with the level of IS executive involvement in overall business planning. These criteria are user satisfaction (rated "extremely important" by the respondents more often than any other criterion) and the usefulness and quality of outputs from IS (rated "extremely important" second most often of all criteria). These findings suggest that merely providing exemplary service does not, in itself, guarantee a role for the IS executive in business planning.

Overall, the survey provides clear evidence that the role of IS within a firm is linked closely with the role of the senior IS manager. If the IS manager is unable to contribute to the overall planning process, that manager is not apt to see the IS function as closely linked to the organization. He or she is not likely to see that IS helps the organization reach its corporate goals.

Without a connection between IS executives and top functional executives in

□ TOP IS EXECS ARE LIKELY TO EMPHASIZE THE COMPETITIVE POSITIONING OF IS.

the organization, it seems doubtful that IS managers will be asked to play meaningful roles in overall business planning—roles that are becoming increasingly needed to sell the importance of IS to the overall business mission. ▭

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